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Journal für Entwicklungspolitik 4, 1990, S. 25 - 37

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INDIAN SUGAR: POWER TO THE PEASANTS

I. Introduction

In this paper I propose to place the Indian sugar economy in the global context and to highlight its distinguishing features. I would also like to discuss the changes which took place during the post-war period analysing their implications and consequences. At the end I have attempted some general observations about the future developments in the Indian sugar economy.

During the last many years scholarly studies of sugar economy have tended to concentrate on the international dimensions of the commodity.[1] They have dealt with such problems as the expansion of the sugar industry in the Third World during the colonial period, the international forces affecting the relationship between the importing and exporting countries, and the impact of recent failures in arriving at international agreements regarding trading of this commodity. Not many studies have paid careful attention to the conditions under which sugarcane is grown. Leaving aside beet sugar for the time being, sugarcane is grown in different parts of the world by millions of farmers under varied conditions. The price of the raw material, i.e. sugarcane, constitutes a major item in the cost of production for the final product, i.e., sugar. However, not many studies have paid attention to he plight of sugarcane growers, their problems and their attempts to survive in the changing situation. This paper will, therefore, pay some attention to the role of cane growers in the India sugar economy.

Some scholars have also tended to concentrate rather exclusively on the international dimensions of the commodity. However, considering the facts that sugar is produced in many countries for the main purpose of domestic consumption, and the recent tendency to acquire self-sufficiency in this regard, one should pay greater attention to such cases among which India is an important one. Although India is the largest producer of sugarcane and sugar in the world, serious scholarly study of its sugar economy has been neglected largely because the country has not figured prominently in the international transactions of this commodity.

Unlike many other countries sugarcane and sugar are not recent entities for India. They have existed for thousands of years. Indians like to believe that their country was the original home of sugarcane from where it spread to other countries and continents. However, traditionally Indians made sugar in raw form called *gur* using smallscale open pan artisan technology. The first vacuum pan sugar factory was set up in India in 1903. By 1930 there were only 30 such factories mostly of a very limited daily crushing capacity, only a few hundred tonnes each. The total annual production was only 100,000 tonnes.[2] The country imported white sugar on a large scale: annually around one million tonnes from Java, Indonesia. On the persistent demand from Indian mill owners, the government of India passed Indian Sugar Industry (protection) Act 1932 imposing protective tariffs against imported sugar. This step encouraged rapid expansion of the industry. By 1939-40, there were 142 factories producing around one million tonnes of sugar per annum.[3]

A tremendous growth has taken place in the industry since Independence in 1947. Around that time there were less than 150 factories producing about a million tonnes of sugar. During the last 40 years the number of factories and the average size of factories have increased tremendously. Sugar production has gone up almost 10 times: it was 10.6 million tonnes in 1989-90. India is now the largest producer of sugarcane in terms of area and quantity. Although India does not figure prominently in the international market, this does not make the Indian case less significant.

II. Major Characteristics

Sugar in India is produced mainly from sugarcane. Except in a few pokkets in the sub-tropical region, there is hardly any beet grown in the country. As stated earlier, India is the largest producer of sugarcane which is grown in 3.3 million hectares of land annually producing 197 million tonnes of sugarcane.[4] The average yield of cane per hectare is around 60 tonnes. However, all the sugarcane is not converted into white sugar. In 1987-88 only about 48 per cent of cane was used for producing sugar in vacuum pan factories. Around 40 per cent of the crop was used for manufacturing *gur* and *khandsari* using open pan technology. The rest was used for seeds, chewing and other purposes.[5] The proportion of cane used by vacuum pan factories and open pan factories varies from year to year depending upon the availability of cane and the relative prices for the different products. In some years as much as 60 per cent of cane is utilised by *gur* and *khandsari* manufacturers, while the vacuum pan factories get less than 40 per cent.

In terms of organisation, there are three types of management structures of vacuum pan factories. In 1987-88 there were 386 sugar factories in the country, 211 of these were in the cooperative sector, while 119 were in the private sector (often joint stock companies) and the remaining 56 were in the public sector or state-owned. As for the installed capacity, in 1987-88, private factories had 2.54 million tonnes, public sector had 0.9 million tonnes and the cooperative sector had 4.7 million tonnes.[6] In the same year out of the total of 357 sugar factories which were in operation, 196 cooperative factories produced 5.27 million tonnes of sugar out of a total production of 9.11 million tonnes, thus contributing 57.8 per cent to the total production of white sugar in the country.[7] In 1988-89 over 2 million cane growers were members of sugar cooperatives.[8] These figures indicate the dominant position enjoyed by the cooperative sector in India's sugar economy.

Another peculiarity of Indian sugar is its marginal role in the international market. India is both importer and exporter of sugar depending upon the size of its domestic production and the price in the international market. There can be a wide fluctuation in this respect. For instance, India did not import any sugar in 1982-83 but it imported a huge quantity of 1.8 million tonnes in 1985.[9] This was because of the failure of the domestic sugarcane crop during the later year. During the last 37 years from 1950-51 to 1986-87, India imported sugar during six years and exported it during 26 years. It both imported and exported the commodity during four years and for one year there was neither import nor export.[10] What is significant to note is that India's exports are a negligible part of its total production of the commodity; and similarly its imports are a negligible part of the total consumption of the commodity. This situation has contributed to the paradox under which, although the largest producer of the commodity, India does not make any impact in the outside world with regard to sugar.

According to one estimation there are 25 million sugarcane growers in the country. More than 50 per cent of these growers have less than one hectare land under sugarcane. In the tropical region, on an average, 5,000 growers supply cane to a sugar factory with a daily crushing capacity of 2,000 tonnes.[11] The number of growers would be larger in the sub-tropical region.

Why are there no sugarcane plantations in India? The question was examined by a government committee in 1920.[12] The committee noted that unlike in the other colonies where virgin land was available for plantation, in India no such land was available in adequate quantity since lands were already being utilised by millions of peasants. Given the attachment of the Indian peasant to his land, it was not considered advisable to take over land for sugarcane plantation. Therefore, barring a few exceptions there are no plantations in India and sugarcane is grown on small plots of land by millions of peasants. This nature of sugarcane growing creates problems for the sugar factories, which will be discussed later.

As already mentioned, the manufacturers of artisan sweetners such as *gur* and *khandsari* using open pan technology dominate the scene. According to one estimate, there are 8,000 *Khandsari* manufacturers in the country.[13] They and *gur* producers utilise 40 to 60 per cent of the cane grown during the year. While the vacuum pan factories producing white sugar are under many controls and regulations of the government, those manufacturing *gur* and *khandsari* are almost free from such regulations. Such a freedom to the producers of one kind of sweetening agent utilizing the same crop contributes to the large scale instability in the market.

In contrast to *gur* and *khandsari,* white sugar produced by vacuum pan factories is one of the most regulated commodities. Almost every aspect connected with sugar is regulated by the government. The government has production targets laid down in its Five Year Plans. The government determines the licensing policy. No new factory can be set up or capacity of the old one expanded without a license from the central goverment. The minimum price of cane to be paid to the cane grower is also fixed by the government. For example, in 1989-90 sugar year (October to September) the government announced a statutory minimum price (SMP) of Rs. 20 per quintal of cane for basic recovery of 8.5 per cent with proportional premium for higher recoveries.[14] Moreover, there is, what is called state advised price (SAP) which is always higher than the SMP. The factories are obliged to pay the growers as per the prices announced by the government.

The sale of sugar is again tightly regulated, under what is called partial control. Under this scheme all factories have to give 45 per cent of their production as levy to the government which is then distributed to the public through Fair Price Shops. Since January 1989, the retail price of one kg of sugar remains Rs. 5.25 in these shops.[15] For the levy sugar the factories are paid a price which will cover their cost of production and a nominal profit. Since the sugar recoveries, plant efficiencies and cost of production vary from region to region the government pays different prices for the same quality of sugar supplied by factories in different regions. The relatively efficient factories in the west and south the have regularly complained against this unfair policy. The remaining 55 per cent of the production called free sale quota, can be sold by the factories in the open market as per the quantities allowed by the central government on monthly and sometimes weekly basis. Needless to say that the price of sugar sold in the open market is higher (sometimes almost double) than the one sold as the levy sugar. In May 1990 sugar was sold at Rs. 9/- per kg. in the open market. The export of the commodity is entirely under the government's control. The government decides what quantities would be exported to which countries, and what quantities would be imported and from where.

The wages of the factory workers who number about 350,000 are again determined by the government as per the recommendations of the Sugar Wage Boards periodically set up for this purpose. The government also determines the disposal of by-products such as molasses. The government also provides finances to the industry. In the case of cooperative sugar factories, it contributes a substantial proportion (over 30 per cent) of their share capital. For the purchase of plant and machinery, the major financial institutions of the government provide funds both to the private and the cooperative sectors.

There is no doubt that the government plays a very important role in all aspects of the sugar economy. What is significant to note is that the governmental role is not only accepted but is considered as legitimate. In fact, whenever anything goes wrong with regard to sugar, it is the government which is assigned the major blame. In determining its sugar policy, the government has to perform a delicate balancing act of reconcilling the somewhat conflicting interests of sugarcane growers, factory owners, factory workers, and the consumers. All the four interest groups have their own political clout. The sugarcane growers constitute the most important interest group. Since they are in large numbers and scattered all over the country, they constitute a significant rural vote bank. No political party can afford to be indifferent to their claims. Similarly, the consumers, particularly those in the urban areas, are a vocal lot and the government is hyper-sensitive to their reaction to any rise in sugar prices particularly on the eve of elections. The mill owners in the private sector exercise their influence through contributions to the election funds of the political parties and keep regular relationship with those in power. The leaders in the cooperative sector are themselves important actors in the politics of their areas. The factory workers are not so large in number to constitute a political force. However, they are unionized and are able to extract significant concessions through their organizations which have links with the political parties. The workers are paid annually a wage bill of Rs. 4,250 million.

The government also derives several benefits from the industry. Annually it collects excise duty of over Rs. 4,400 million from the factories. The State Governments collect Rs. 1,500 million as purchase tax on cane. According the one estimation, the sugar industry in the country contributes more than Rs. 30,000 million to the nation's economy. The cane growers themselves are paid annually more than Rs. 25,000 million as price for their crop.[16]

It is significant to note that there is no foreign capital involved in India's sugar economy. During the British rule there were a few sugar factories owned by foreign entrepreneurs. However, they were taken over by the Indian business houses by the time independence was announced. India's sugar industry is cent-percent indigenous in this respect. The technology is also by and large indigenous. Until the fifties the country used to import sugar machinery for setting up new sugar factories. During the last three decades, India has acquired the capacity to produce such machinery locally. What is more, Indian manufactures have successfully competed with foreign companies for setting up sugar plants on turn-key basis in other countries.

III. Changes in the post-war period

Since India achieved independence in 1947, the post-war period by and large coincides with the period of independent India. One major change which has taken place during this period is the large scale expansion in the area growing sugarcane. This has also resulted in the tremendous increase in the production of sugar which has already been noted earlier. There has been similar increase in the production of *gur* and *khandsari*. The increase is almost 10 fold during the last four decades. There is also some evidence that the productivity is increasing. The per hectare production of sugarcane has been rising at least in some areas. For the country as a whole the average yield per hectare has gone up from 38.5 tonnes in 1951-52 to 60 tonnes in 1987-88.[17]

During this period, there have been other major changes in the industry. The centre of industry has now shifted for the sub-tropical north and east to the tropical west and south. In 1988-89, 211 out of 386 sugar factories were located in the tropical region of west and south.[18] In 1987-88 the factories in the tropical region had an installed capacity of 5.4 million tonnes. The sub-tropical region had only 2.7 million tonnes, almost half.[19] Initially, when the sugar factories were set up they were located in parts of Uttar Pradesh and Bihar in the north and east. These were sub-tropical regions where not much irrigation was required to raise the crop. With the setting up of a number of irrigation canal systems in the west and south, sugarcane began to be cultivated there. It was soon found that the soil and climate were more favourable to raise this crop in these regions. Relatively the average yield was higher, that is to say, the per acre or per hectare output of cane was much higher in these areas. What is even more important is that the cane grown in the new areas has higher sucrose content, with the result that the percentage of sugar recovery is much higher. Roughly speaking, if the average yield per hectare in the north is around 40 to 60 tonnes, it is 80 to 100 tonnes in the west and south. While the average recovery is round 9 per cent in the north, it is almost around 11 per cent in the west and south.[20] This has changed the character of the industry in more ways than one which will be discussed later.

The most significant change is in the field of ownership and control of the industry. At the time of Independence almost all the sugar factories were owned by national and regional capitalists. There were a handful of factories owned and managed by the state. In 1950-51, the first cooperative sugar factory was set up in Ahmadnagar district in Maharashtra, western India. Following the success of this venture, the Government of India decided to give preference to cooperatives in issuing new licenses for setting up factories, As mentioned earlier, the cooperatives now occupy a dominant position in the industry having 211 out of 386 factories with 4.7 million tonnes installed capacity out of the total 8.1 million tonnes installed capacity in 1987-88. The cooperatives now have 60 per cent share in the installed capacity and also in the annual sugar production, Thus the geographical shift of the industry has coincided with the structural change in its control and management. The private factories are more or less concentrated in the north and east while the west and south are dominated by the cooperative sector.

In contrast to private factories the cooperatives are owned by the sugarcane growers and therefore, controlled by them. This eliminates the conflict between the cane growers and the factory owners. In the case of private factories, there is an exploitation of cane growers by the mill owners in various forms. The private mills try to pay the lowest price, cheat growers in weighing their cane, delay the payment for the cane supplied, and on times refuse to accept the cane thus leaving the growers at a great loss. All these problems are eliminated in cooperatives since they are owned and controlled by the cane growers. In fact, the cooperatives aim at paying the highest price, and providing maximum possible facilities to the growers. Initially there were doubts about the ability of the cane growers to manage these factories efficiently. Over a period of time these have proved to be unfounded. The cooperative factories have proved to be as efficient as the private ones. In fact, in some cases, they have proved to be more efficient. The leaders of sugarcane growers have acquired the necessary knowledge and skills through their experience of working with cooperatives which has enabled them to improve the working of these enterprises.[21]

The sugar cooperatives have not only fulfilled the basic objective of helping the cane growers by giving them higher prices and other facilities, they have also undertaken a wide variety of welfare activities for the people in their areas. They have set up schools, colleges, and hostels for the local children not only of sugarcane growers but also of others. Some of them have set up highly technical engineering and medical institutions, They have also engaged in other activities such as construction and maintenance of village roads, running health and cultural centres, and providing agricultural extension to the farmers. In short, a cooperative sugar factory in course of time becomes a centre of growth around which several other productive, educational and welfare activities are organised. The experience of working with a sugar cooperatives has, in many areas, encouraged the local leaders to undertake other agricultural processing industries such as cotton cooperatives and dairy cooperatives.

The most significant development associated with sugar cooperatives in Maharashtra and Gujarat and other states in the west and south is the emergence of new leadership around these enterprises. These leaders are very confident and competent in whatever they undertake. Because of their achievements in sugar cooperatives and other enterprises they have acquired tremendous political power, with the result that in many areas local politics is conterminous with cooperative politics. With their political clout the cooperative leaders are able to acquire many concessions from the government to protect and further develop the cooperative enterprises including sugar factories under their control.

Cooperatives in various parts of the world including most parts of India are not known for success. In fact there are more failures than successes in this field. The sugar cooperatives in Maharashtra and other neighbouring states are one of the few examples of a vigorous and successful cooperative movement. How to explain this success and whether this experiment is replicable elsewher and under what conditions?

The main factor contributing to the success is the ability of cooperatives to solve the most difficult problem of cane supply to the factories. Sugarcane is a perishable commodity and it has to be crushed soon after it is harvested. It is therefore, essential that there is a steady supply of cane to the factory throughout the crushing season. A shortage of cane will keep the plant and machinery idle and thus increase the average overhead costs. An excess supply of cane will mean cane lying in the premises of the factory, leading to a fall in the recovery due to staleness and driage. If the cane is not crushed within twenty-four hours, there is a process of deterioration (inversion) which reduces the recovery of sugar. The sugar factories in the north have not succeeded in solving this problem, because of the conflict of interests between the mill owners and sugarcane growers. The sugar factories in the west have introduced a centralised harvesting and transport system with the result that the factory is able to plan its crushing campaign for the season and ensure that there is regular and steady supply of cane throughout the day during the season. The members of the cooperatives are not involved in harvesting and transport of cane. These operations are planned and carried out entirely by the agricultural departments of the factories.

The cooperatives have enabled the small and big growers to identify their common interest and come together for mutual benefits. Sugarcane in Maharashtra like elsewhere in many other parts of the country is grown on small plots by a large number of small farmers growing cane on less than one hectare of land. There are also medium level cane growers growing cane on land between 1 and 4 hectares. Then there are big growers cultivating cane on more than 4 hectares of land. Although they are relatively rich they are small in number. The contribution of cane by the medium and big cane growers to a factory is less than 50 per cent. They cannot by themselves utilise the full capacity of the factory. Without utilising the full capacity, the factory would not be financially viable and the cooperative will not be able to give attractive prices for cane. It is, therefore, in the interest of medium and big growers that they must encourage the large number of small growers to join the cooperative and supply the cane. Thus contrary to conventional expectations here there is an alliance between the cane-growers of various sizes for their own self interest. Because of the crucial role played by the small growers who are in large numbers and who enjoy equal rights in voting, they receive the same prices for their cane and enjoy the same facilities as others.

Another important factor contributing to the successful working of sugar cooperatives is the nature of leadership involved in these enterprises. The sugar cooperatives play a crucial role in the economic life of the growers. As a result the growers take keen interest in their working. The position of director, chairman and vice-chairman of sugar cooperatives is characterised by power, prestige and patronage. There is, there fore, keen competition to occupy these positions. Along with sugar cooperatives there are other structures of power in the areas such as Panchayati Raj (local government) institutions, other cooperative structures and political party organizations. These structures of power are interrelated and leaders occupy interlocking positions in them. This results in further sharpening the competition for occupying these positions. Contrary to common beliefs about political competition, in the case of most of the sugar cooperatives there has been a beneficial impact.[22] Since the leaders value these positions and have to compete with others through democratic process to retain their positions, they have to show increasingly better results in the performance of their organisations. Thus, in many cases, competition among leaders has contributed to the better functioning of the cooperatives.[23] By and large the government has played a constructive role in overseeing the working of these enterprises. Instead of resorting to too much of interference it has allowed the democratic process to take its own course. The leaders have been given full freedom of decision making in the enterprises under their control. If there were any complaints or grievances against the actions of the leaders these were resolved by going to the general body of members rather than issuing orders from above.

The above discussion should not lead one to the conclusion that everything is fine and wonderful about the working of sugar cooperatives. In fact there is a large body of critics, who are not at all happy with the emergece of sugar cooperatives and their leaders. While some of their criticisms are derived from bias and prejudices there are a few criticisms which have some validity.

Some of the critics, particularly among intellectuals leaning towards the left, have condemned the sugar cooperatives as organisations dominated by 'Kulaks' and rich peasants.[24] According to them these cooperatives exist almost entirely to further the interests of this class. Although it is true that those occupying the positions of leadership in most of the factories are substantial cane growers, this does not mean that the sugar cooperatives exist and function for their interests only. As mentioned earlier, there is no discrimination in the prices or other facilities enjoyed by the cooperative members irrespective of their size as cane growers. A small cane grower receives the same price for his cane and enjoys the same facilities as the large one. It is possible that because of his financial position and other constraints he may not be able to compete effectively for leadership positions. In fact it can be argued that the sugar cooperatives are needed more for the small growers rather than for the bigger ones. The medium and big cane growers managed to survive in the past before the sugar cooperatives were set up, They had enough resources to stay in the *gur* manufacturing business and had the necessary contacts and influence with traders and business men to safeguard their interests, Before the emergence of cooperatives the small growers could not even think of raising sugarcane with confidence. The sugar cooperatives have made the small growers economically viable.

The sugar cooperatives are often criticised for their involvement in politics. This criticism is also unjustified. If a cooperative is performing vital functions for its members, it is bound to attract the attention of a large number of members who will compete for leadership positions. As argued elsewhere (Baviskar 1980), competition among leaders within certain limits is helpful for the healthy functioning of cooperatives. A non-political cooperative in this sense will often be a life less cooperative. There are of course cases of excesses where politics becomes the primary preoccupation of leaders and business of sugar becomes secondary. This has happened in a number of cases where licenses for setting up new sugar factories were issued on political considerations without examining whether there was adequate cane or a potential for adequate cane in the area. Because of the paucity of the raw material, i.e. cane, such ventures are running at a loss.

There are also criticisms about corruption in cooperatives.[25] Since sugar cooperatives are democratic organizations and their functioning is open to all, all actions of leaders, even small ones, and other events and developments are widely reported and discussed. This does not mean that there is greater corruption in cooperatives as compare to other organizations of similar size and magnitude. What is often talked about as corruption is in many cases part of the privileges of occupying high positions in cooperatives. These privileges include the use of factory vehicles, guest house, travelling etc. This is not to deny that some leaders may be making money at the cost of their cooperatives. However, such matters are openly debated and very often such leaders have been defeated in the subsequent elections.

There is no doubt that the emergence and growth of the cooperative sector in the Indian sugar economy is one of the most important developments during the last four decades. It has opened up vast possibilities for taking up agricultural processing activities on cooperative lines for the benefit of producers. What is more, the success of sugar cooperatives has created a class of peasantry which is confident about its ability to create and manage complex enterprises. The cooperatives have also played a significant role in the strengthening of democratic institutions in the area.

IV. Concluding Observations

The steady expansion of sugar industry in India during the last four decades suggests that the expansion will continue in future too. Although India produces sugar mainly for its own consumption needs, these needs themselves are quite substantial, Assuming a modest growth of 6.9 per cent in consumption of sugar in the country, the VII Five Year plan has set the target of 15.5 million tonnes for the year 1994-95.[26] This does not mean that India will not enter the international market. As and when the prices are favourable the Indian government will try to export some quantity of sugar by squeezing the domestic demand in order to earn the much needed foreign exchange. However, such actions will be few and far between, The largest producer of sugar in the world will remain inward looking for a long time to come. The expansion in the sugar industry will continue in the cooperative sector. Gradually and steadily the share of the cooperative sector will go on increasing because of the inherent advantages which the cooperatives enjoy. The private sector mills are old and obsolete and have not cared to reinvest their profits for modernizing their plants. They survive largely because of the political forces favourable to them in the northern states. The cooperative sugar sector in India has proved its superiority in technical, financial and social matters as compared to the factories in the private and public sector. The private sector factories have exploited the cane growers and the public sector factories are notorious for their inefficient and corrupt functioning. It is strange that other sugar producing countries of the Third World have not paid adequate attention to India's experiment of production in the cooperative sector and explored the possibility of organising cane growing peasants into cooperatives.

Wherever sugar cooperatives come up and function successfully they will increasingly dominate the local political scene. The political parties and governments will have to take cognizance of the clout acquired by the leaders of the sugar cooperatives. As in the case of Maharashtra, the leaders of sugar cooperatives themselves will play a dominant role in the affairs of political parties and local governments. Many other sugar producing countries in the Third World should, therefore, have a close look at India's experiment in this field not only to provide better returns to the sugarcane growers but also to make them politically confident and powerful.

The Indian case is noteworthy for another reason. It has been argued in the literature that cash cropping and commercialization of agriculture (such as growing sugarcane to produce sugar) inevitably lands to marginalization of small farmers, subordination of the economy to the international capitalist forces, and the consequent underdevelopment of the economy as a whole. It is evident that the Indian case contradicts the assumptions underlying this argument. On the other hand, the Indian example shows that the commercialization of agriculture through growing sugarcane has contributed to the economic viability of small farmers, the cooperativization of the sugar industry has strengthened the economic and political position of cane growers vis-à-vis the private mill owners, and the Indian sugar economy, although the largest in the world, has remained immune to the impact of world capitalist forces.[27]

NOTES

1 A typical example of this trend is George C. Abott's *Sugar*, London: Routledge, 1990.
2 *Cooperative Sugar Directory and Year Book 1986-88*, M. S. Marathe (ed.), New Delhi: National Federation of Cooperative Sugar Factories Ltd,, 1989, p. 1.
3 *Ibid.*
4 *Ibid.*, p. 2.
5 *Ibid.*
6 *Ibid.*, pp. 10-11.
7 *Ibid.*
8 National Federation of Cooperative Sugar Factories Ltd., New Delhi, *Annual Report 1988-89*, p. 19.

9 George C. Abbott, *Sugar*, London: Routledge, 190, p. 54.
10 Sanjaya Baru, *The Political Economy of Indian Sugar: State Intervention and Structural Change*, Delhi: Oxford University Press, 1990, pp. 184-85.
11 As in n. 2, p. 2.
12 India Sugar Committee, *Report*, Simla: Government Central Press, 1921.
13 As in n. 2, p. 1.
14 As in n. 8, p. 33. On 27 June 1990, the value of 1 £ Sterling was equal to Rs. 30.40. One US $ was equal to Rs. 17.40.
15 *Ibid.*, p. 32.
16 *Indian Sugar Year Book 1987-88*, Vol. I, S. L. Jain (ed.), New Delhi: Indian Sugar Mills Association, 1989, p. 7.
17 *Ibid., pp. 15-16.*
18 As in n. 8, p. 15.
19 *Ibid.*, p. 17.
20 As in n. 16, part II: Statistics, pp. 8 & 14.
21 For details about the working of sugar cooperatives see B. S. Baviskar, *The Politics of Development: Sugar Cooperatives in Rural Maharashtra*, Delhi: Oxford University Press, 1980. For a recent work see D. W. Attwood, *Raisinq Cane: The Political Economy of Sugar in Western India* (Ms.), n.d.
22 The politics of sugar cooperatives is discussed at length in B. S. Baviskar's work cited in n. 21.
23 D. W. Attwood has shown how competition among leaders of neighbouring sugar cooperatives contributes to innovation and improved performance. See his "Does Competition Help Cooperation?" *The Journal of Development Studies*, Vol. 26, No. 1, October 1989, pp. 5-27.
24 See Sanjay Baru cited in n. 10. He argues on such lines without much evidence.
25 For a detailed analysis see B. S. Baviskar "Leadership, Democracy and Development: Cooperatives in Kolhapur District, Maharashtra", paper presented at the conference on Cooperative Enterprises and Rural Development in India, New Delhi, 1988.
26 As in n. 8, p. 26.
27 See D. W. Attwood cited in n. 21.

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